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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,544	03/26/2004	Kazuhide Kanemura	Q80614	6128

23373 7590 05/03/2006

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EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/809,544	Applicant(s) KANEMURA, KAZUhide	
	Examiner Jeff Wollschlager	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because the word “dope” is spelled “cope”. Additionally, the abbreviation TAC is used without identifying the material. Further, the grammar found in the abstract as a whole is poor and should be corrected. For example, “the gel-like film becomes to the maximum” is not proper English. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claim 3 is objected to because of the following informalities: The word “peeling” is spelled “peeing”. Appropriate correction is required.

Claim 17 is objected to because of the following informalities: A verb is missing from the claim. One possible rendering is, “...properties of acid [are] in said dope solution.” Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 19-21 are indefinite because it is unclear whether the method or the products are being claimed.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 19-21 are rejected under 35 U.S.C. 101 because the claims are neither directed to a method of solution casting or a product. See MPEP 2173.05(p).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 15, 16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeda (U.S. Patent Application Publication 2001/0009312; published July 26, 2001; now U.S. Patent 6,582,645).

Regarding claim 1, Takeda teaches a solution casting method for producing a polymer film from a dope solution containing a polymer and a solvent (abstract) comprising the steps: casting the dope solution from a casting die on a substrate/metal belt to form a gel-like film (paragraph [0083]; and Figure 1, elements (1), (2), (3)), drawing the film in a tangential direction of the substrate/metal belt to peel the film from the substrate at a speed of at least 10 m/min (paragraph [0083]; Figure 1, elements (4),

(2'); Figure 2, note element 2' relative to elements (3) and (34); and paragraph [0016], teaching a speed of 40 m/min to 120 m/min), regulating to less than 20 mm a movement in which a peeling position of the film moves on the substrate (paragraphs [0026], [0027], [0042], [0092], [0104-0105] and [0113]), and drying the peeled gel to obtain the polymer film (paragraph [0083]).

Takada teaches that the quality of the produced film is better when the fluctuation, relative to the peeling point, is less than 20 mm (paragraphs [0104,0105, 0113]. Takada additionally teaches that the peeling roll is adjusted in a vertical direction (see Figure 7, element (44), for example) to produce a high quality film by maintaining a constant angle formed by the web with the metal support (paragraph [0026]). Clearly, in order to maintain a constant angle, the adjustment takes place when the fluctuation is less than 20 mm since Takada inherently wants to make the highest quality film possible.

As to claim 2, Takada teaches that the peeling roll is adjusted to maintain a constant angle formed by the web with the substrate/metal belt (paragraph [0026]). Additionally, Takada anticipates claim 1. Further, it is noted, that claim 2 appears to recite an inherent property of claim 1. As such, it is an inherent property in the method taught by Takada for the moving direction of the peeling position to change at least four times in one second along a transporting direction of the substrate. Also, in view of the teaching of Takada to constantly maintain the angle, it is understood that constantly means the angle is being controlled, which means the angle is moving, at least four times in one second.

As to claim 3, Takada teaches a peeling roll is used for peeling the gel-like film (Figure 1, element (4)).

As to claim 5, Takada teaches the substrate is adjusted in the range of 10 °C to 40 °C (paragraph [0074], teaches a range of 0 °C to 50 °C, and [0101], an example at 10 °C).

As to claims 15 and 16, Takada teaches the solvent is a mixture containing dichloromethane/methylene chloride and alcohol/ethanol and that the alcohol/ethanol is at more than 8 wt. % (paragraph [0101]). Takada also teaches that the alcohol has from 1 to 4 carbon atoms (paragraph [0082]).

As to claim 18, Takada teaches the polymer is cellulose acylate (paragraph [0007]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takeda (U.S. Patent Application Publication 2001/0009312; published July 26, 2001; now U.S. Patent 6,582,645).

As to claim 4, Takada teaches that the film contacts the peeling roller just after the peeling off of the film from the substrate/metal belt (paragraph [0012]). Additionally,

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Takada teaches the web contacts the roll within 5 seconds, more preferably within 3 seconds after being peeled from the substrate/metal belt [paragraph [0076]]. Further, Takada teaches movement of the adjustable peeling roll, on the order of magnitude of 100 mm (paragraph [0127]). At speeds of 40 m/min – 120 m/min, the calculated length of the internal common tangent of the peeling roller and the substrate/metal belt ranges from 0 mm – 10,000 mm. However, Takada's teaching clearly is at the low end of the range and the claimed range falls within the range of the prior art. As such, Takada anticipates the claim.

In the alternative, Takada teaches the film contacts the peeling roller just after the peeling off of the film from the substrate/metal belt (paragraph [0012]). The calculated length of the internal common tangent of the peeling roller and the substrate/metal belt ranges from the teaching of Takada can range from 0 mm – 10,000 mm. The claimed range is 0.1 mm to 100 mm. However, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to take the teaching of Takada and employ the low end of the range, between 0.1 mm to 100 mm, in order to produce a higher quality film by minimizing the time the film is not supported. The motivation to do so is provided by Takada who teaches that stably transporting the film after peeling provides a better quality product (paragraph [0005]). In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (U.S. Patent Application Publication 2001/0009312; published July 26, 2001; now U.S. Patent 6,582,645).

As to claim 6, Takada teaches the method of claim 5 as discussed in the 102(b) rejection above, but does not teach a peeling speed up to 150 m/min. However, Takada teaches a preferable peeling speed up to 120 m/min (paragraph [0016]). Therefore, it would have been *prima facie* obvious to one of ordinary skill at the time of the claimed invention to modify the method taught by Takada and increase the preferable maximum speed from 120 m/min to 150 m/min. One of ordinary skill would have been motivated to increase the production speed taught by the method of Takada because, as taught by Takada, the demand for cellulose acylate films is increasing (paragraph [0003]).

Claims 7-14, 17, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda (U.S. Patent Application Publication 2001/0009312; published July 26, 2001; now U.S. Patent 6,582,645) in view Tasaka et al. (U.S. Patent 6,814,914; issued November 9, 2004; priority date May 30, 2001).

As to claim 7, Takada teaches the method of claim 6 as discussed in the 103(a) rejection above, but does not expressly state the gel-like film is on the substrate in the range of 0.5 minutes to 10 minutes. However, Tasaka et al. teach an analogous method of producing a film on a substrate where the film is on the substrate for 1 minute

(col. 32, lines 18-24). Therefore it would have been *prima facie* obvious to one of ordinary skill in the art to combine the teachings of Takada and Tasaka et al. to solution cast a film where the film is on the belt for a controlled time, such as 1 minute, because Tasaka et al. teaches that under drying and over drying the film has a negative impact on the quality of film produced (col. 18, lines 46-54). As such, the claimed invention as a whole is rendered obvious over the combined teaching of the prior art.

As to claim 8, Takada teaches the substrate/belt temperature is in the range from 0 °C to 50 °C. This would implicitly heat the film to a temperature within the claimed range. As such, the claimed range and the range of the prior art overlap. Additionally, Tasaka et al. teach the temperature range at the peeling site is 10 °C to 40 °C (col. 19, lines 1-3)

As to claims 9 –11, Takada teaches the method of claim 3 as discussed in the 102(b) rejection above. Takada also clearly teaches that the amount of solvent remaining in the film when the peeling force is applied to remove the film from the substrate/metal belt impacts the quality of the film produced. Takada also teaches there are discrete ranges of solvent levels where the quality of the film is different (see paragraphs [0004], [0092]). Takada does not expressly specify specific solvent criterion relative to a film thickness of 60 micrometers.

However, Tasaka et al. teach an analogous method of producing a film from solution casting wherein the film thickness ranges from 40 to 150 micrometers (col. 1, lines 60-64). Tasaka et al. also teach that the impact of the residual solvent level in the film at the time of peeling has a strong impact on the quality of film produced (col. 18,

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lines 45-67). Therefore as taught by Takada in view of Tasaka et al., the level of solvent in the film at the time of peeling films of various thicknesses is a well recognized result effective variable in the art of solution casting films. So, one of ordinary skill would have had to take the level of solvent remaining in the film at the time the peeling force was applied in to account to produce a film of adequate quality. This level of solvent would have been readily optimized as is routinely performed in the art. (See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)). Therefore the claimed invention as a whole is rendered obvious over the prior art.

As to claim 12, Takada in view of Tasaka et al. teach the method of claim 11 as discussed in the 103(a) rejection above. Additionally, Tasaka et al. teaches the solvent level at the time of peeling is in the range of 5 to 150% by weight. In addition to the level of solvent being a result effective variable as discussed above, the claimed range and the range of the prior art overlap.

As to claim 13, Takada in view of Tasaka et al. teach the method of claim 9 as discussed in the 103(a) rejection above. Takada additionally teaches that the film contacts the peeling roller just after the peeling off of the film from the substrate/metal belt (paragraph [0012]). The calculated length from the peeling position to the peeling roller from the teaching of Takada can range from 0 mm – 10,000 mm. The claimed range is 0.1 mm to 100 mm. However, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the claimed invention to take the teaching of Takada and employ the low end of the range, between 0.1 mm to 100 mm, in order to produce a higher quality film by minimizing the time the film is not supported. The

motivation to do so is provided by Takada who teaches that stably transporting the film after peeling provides a better quality product (paragraph [0005]). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

As to claim 14, Tasaka et al. teach release agents/plasticizers/sliding agents are added to the dope solution (col. 15, lines 14-51; col. 17, lines 61-67). One of ordinary skill would have been motivated to add these materials, as taught by Tasaka et al., for the purpose of adjusting mechanical properties (col. 15, lines 15-18).

As to claim 17, Takada teaches the method of claim 15 as discussed in the 102(b) rejection above, but does not disclose adding acid to the doping solution. However, Tasaka et al. teach acids in the dope solution (col. 13, lines 9-29; col. 15, lines 15-20). Therefore it would have been *prima facie* obvious to one of ordinary skill in the art to employ acids in the doping solution because as taught by Tasaka et al. they can be effective plasticizers (col. 15, lines 15-20) and because as taught by Tasaka et al. they are regularly used in the initial reaction to make the cellulose acylate and would therefore still be present in the doping solution unless actively removed.

As to claims 19-21, the claims stand rejected under 35 USC 101 and 35 USC 112 as discussed above. However, it is noted that Tasaka et al. disclose the polymer films can be employed in a variety of applications requiring excellent optical properties including optical retardation film, an optical compensation sheet an elliptical polarizing

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plate or an image display (col. 1, lines 8-12; col. 12, lines 31-36). As such, polarizing filters, protective films for the polarizing filters, and a film for a liquid crystal display are known uses for cellulose acylate films in the art.

Conclusion

All claims are rejected.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,844,033 to Shimizu et al. Particularly, col. 16, lines 63-67 teaching acids added to the doping solution and col. 20 lines 50 – col. 21, line 3 teaching residence time on the belt, solvent levels at the time of peeling, the impact of solvent levels on peeling and product quality, and peeling temperatures.

U.S. Patent 6,731,357 to Tachibanna et al. Particularly, col. 8, lines 20-27, teaching that casting speed, solvent content, and peeling tension are known variables that have an impact on film quality.

U.S. Patent 5,663,310 to Shimoda et al.

JPO Patent Publication 2002-028943 to Konica teaches that the thickness of the web and the solvent level impacts the quality of film produced (paragraph [0051])

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-

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8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JW

Jeff Wollschlager
Examiner
Art Unit 1732

April 26, 2006

A handwritten signature in black ink, appearing to read "Michael P. Colaianni", with a long horizontal flourish extending to the right.

MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER